exhibit larger errors—possibly enough to fill the gap between ±0″·04 and ±0″·08.

The errors of division of the Leyden circle were determined for every line. The constant error of ±0″·14 indicated by Professor Auwers's researches must therefore be accounted for either by the casual errors of this determination, or by the variations of latitude during the comparatively short period included in the time of observation, or by unknown causes.

There seems to be no doubt, I may say in conclusion, that the accuracy of fundamental declinations has substantially gained during the past half-century, as well as during the century which preceded; and that the errors resulting from faulty divisions and serious flexures are now far less harmful than they formerly were.

Williamstown, Mass, U.S.A.:
1895 *May* 31.

Comparison of the Sun's Longitudes for 1900 *computed from Newcomb's Tables of the Sun with those computed from Le Verrier's Tables.* By A. M. W. Downing, M.A., D.Sc.

In view of the probability of the adoption of Professor Newcomb's Tables of the Sun in some, at all events, of the astronomical ephemerides at an early date, the publication of the following comparison may be of interest. It exhibits the corrections to apparent longitudes of the Sun, taken from Le Verrier's *Tables du Soleil,* deduced from the corresponding longitudes taken from Professor Newcomb's tables, at eight-day intervals during the year 1900. The materials for computing the latter longitudes have been communicated to me by Professor Newcomb, in advance of the publication of his tables, accompanied by his courteous permission to publish the results if I thought fit to do so.

The mean of the forty-six individual corrections for the year is −0″·485. It should be pointed out, however, that the value of the constant of aberration adopted by Professor Newcomb is 20″·50, whilst that adopted in Le Verrier's tables in 20″·45. If the same value of the constant be adopted in both tables the mean correction to Le Verrier becomes −0″·435.

Downloaded from http://mnras.oxfordjournals.org/ at University of California Santa Barbara/Davidson Library on July 7, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1895MNRAS..55..514D

Longitudes of Sun 1900.

Corrections to Le Verrier's Tables.

Day.	Correction.	Day.	Correction.	Day.	Correction.
Jan. 1	−0″·43	May 9	−0″·04	Sept. 6	−0″·84
9	−0·50	17	+0·12	14	−0·87
17	−0·32	25	+0·09	22	−0·93
25	−0·19	June 2	−0·07	30	−1·08
Feb. 2	−0·27	10	−0·07	Oct. 8	−0·97
10	−0·22	18	−0·04	16	−0·93
18	−0·07	26	−0·16	24	−1·17
26	+0·02	July 4	−0·43	Nov. 1	−1·24
Mar. 6	−0·10	12	−0·42	9	−1·09
14	−0·07	20	−0·35	17	−1·13
22	+0·12	28	−0·56	25	−1·25
30	+0·01	Aug. 5	−0·75	Dec. 3	−1·10
Apr. 7	−0·01	13	−0·70	11	−0·93
15	+0·06	21	−0·70	19	−0·95
23	+0·01	29	−0·82	27	−0·97
May 1	+0·01				

Nautical Almanac Office:
1895 *September* 9.

Description of a Mechanical Apparatus for computing Refractions.

By W. E. Cooke.

(*Communicated by Sir Charles Todd.*)

This consists essentially of two scales, B and F, sliding in parallel grooves, a movable pointer, P (shaded in the diagram), and two fixed scales for barometer and thermometer respectively.

A, C, E, G are narrow strips of metal serving as guides to the movable portions.

B is a strip of brass, 21 in. × 3 in. × $\frac{3}{16}$, on which are ruled divisions as follows: 17 longitudinal lines divide it into 18 rows, the fourth line from the top being rather thicker than the others. In making the short vertical graduations two different scales were used, one inch representing ·0200 for the first four rows, and three inches representing the same quantity for the remaining 14. The commencement of each row represents successively the logs. 0·3200, 0·6200, 0·9200, 1·2200, 1·4700, 1·5200, 1·5700, &c., to 2·1200, and the figures inscribed are the antilogs corresponding to the scale numbers thus obtained. (It will be noticed that the antilogs overlap, *i.e.* the figures at the end of

Downloaded from http://mnras.oxfordjournals.org/ at University of California Santa Barbara/Davidson Library on July 7, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System